



SAN BERNARDINO MICROWAVE SOCIETY, Incorporated

FOUNDED IN 1966

A NON-PROFIT AMATEUR TECHNICAL ORGANIZATION DEDICATED
TO THE ADVANCEMENT OF COMMUNICATIONS ABOVE 1000 MC.

W6IFE Newsletter

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At the **11 July** 2002 meeting of the SBMS will be a technical talk on "Gettin' Your Stuff Together". A program on things to bring while contesting, where to go, and how to liaison. We will have maps that describe where to stop and who you can talk to. Descriptions of the local spots like Signal Hill and Frazier Peak. We will have time tested lists of what to bring along with you, and a list of the repeater frequencies to use in what area. John, KE6HPZ will give a short talk on using a PIC controller piggybacked onto a sequencer to control latching type relays. We will also discuss the status of the 24 GHz project. We should have the parts kits for the mixer board available at the meeting, thanks to Dave and Ken. Next up is the PIC board and parts. The SBMS meets at the American Legion Hall 1024 Main Street (south of the 91 freeway) in Corona, CA at 1900 hours local time on the first Thursday of each month. Check out the SBMS web site at <http://www.ham-radio.com/sbms/>.

Membership notes- It was an unpleasant surprise when it was announced that Richard Coyne, WW7D had passed away at the end of May. In another note received from Richard J. Tester (SON) regarding the passing of his father (age 91) Richard L. Tester, W6YVO on 5-18-02. Richard was a civil service employee during WWII flying many missions in the South Pacific as a radio operator/ navigator for Conairways. He was later employed in aircraft radio repair. After a relatively short illness, Sam Luitwieler, K6VLM, passed away peacefully on this last Friday (June 21). Services are still pending. Sam was a generous and prolific builder and designer. He had a

keen interest in UHF, microwaves and ATV. He will be sorely missed by all. Bob Gardner, W6SYA has been very ill for the past couple of months and is at home.

Tune up party- We are going to be at the park in Costa Mesa on Saturday the 27th of July after the TRW swap meet and stay as long as we care to. Kerry will have testing setups for 10 and 24 GHz. It is a good time to check your rig and see what others have been up to. Map in this issue of newsletter.

Last meeting- Doug, K6JEY presented a kick off to other talks about the interfacing of the transverter to the "IF Radio". Doug's notes are enclosed in this newsletter. Dave, WA6CGR continued the talk on interfacing as did Rick, W6ESS. Rick had his Elecraft K2 transceiver to show the modifications he had made to make it a full time microwave IF radio. Welcome to new member Steve Grudzinski, AD6HT of Hacienda Heights; Charles Clark, N7MLD of Farmington, UT. It was brought to the attention of the Society that our meeting place host, the American Legion is planning a memorial in Corona. The Society voted to donate \$50 towards the construction. 27 people present.

PCOMM project update- last meeting Kurt, K6RRA had the mixer boards available for \$5 each. In the next month or so Dave, WA6CGR and Ken, WB6DTA will be assembling the parts kit for the mixers. Dave will be picking up some WR-42 waveguide for members who had placed an order at the meeting.

Scheduling

August 1 Contest get ready session. Maps, advice, supply lists and liaison information

August 3-4, 1800Z - 1800Z - ARRL UHF Contest

August 12, 1720Z - Perseids meteor shower

August 17-18, 8 AM - 8 PM - ARRL 10-GHz Cumulative Contest

September 5 K6JEY session on frequency measurement and calibration.

September 14-16, 1800Z - 0300Z - ARRL September VHF QSO Party

September 21-22, 8 AM-8 PM - ARRL 10-GHz Cumulative Contest

October 3 24 GHz testing and equipment review. Bring your rig and get it tested.

October 24-27 - Microwave Update 2002/Eastern VHF-UHF combined Conference sponsored by N.E.W.S.

November 7 WA6JBD program on Network Analyzers.

December 5 5.7 GHz gear report and testing.

Wants and Gots for Sale

For Sale: HP 5245L counter and manual with plugins 5253B 50-500 MHz, 5245A .3-3 GHz, 5254B.2-3 GHz, 5255A 3 to 12 GHz \$500 Bob Gardner W6SYA 818-248-3683

Want/ Borrow: EIP545 counter manual Larry K6HLH ljohns@qnet.com

Want: 1 or 2 6BZ8 and 6CG8 tubes for rehabbing 2 Gonset 2 mtr am rigs Kurt K6RRA k6rra@gte.net

For Sale: dc-dc voltage converters +5v dc to &endash;5 v dc \$1 each John KJ6HZ 909-683-1434

Want: 2 GHz MDS dish John KJ6HZ 909-683-1434

Want: HP435 power meter sensor pin connections Dick K6HIJ 760-253-5127

For Sale: Yaesu FT 790MKII 430-450 MHz multi-mode transceiver. LCD display, low receive current consumption, 2.5 watts on battery and 20 watts with snap-on amp. Comes with mobile mount, snap on 20w amplifier, snap on battery box with new nicads in it, manual, mic., and original box. \$275. Doug K6JEY dmiller@moonlink.net 562-424-3737.

Activity reported at the June SBMS meeting- Mel, WA6JBD has been working on a 2 GHz IF radio and is getting ready to move the QTH; Gary, W6KVC moved in to his new place; Chuck, WA6EXV reported a successful fit test of the 1.2 to 2.3 GHz translator antenna brackets on the tower leg at Heaps Peak and has continued the burn in of the beacon at 2304.300 (please note the corrected frequency from error in last months newsletter); Bill, WA6QYR acquired two 10 ft and two 7 ft TVRO dishes and receivers. The mounting assemblies should make an azimuth and elevation mount for AO-40 work. He has done some modification on his 24 GHz Pcom unit and has investigated some of the Qualcomm dro and other synthesizers for use in receivers; Frank, WB6CWN dusted off gear and hopes to be on for the June contest; Dick, WB6DNX visited Heaps Peak with EXV and took video of new buildings and tower located there; Steven, KE6KYD has a 10 GHz transverter up and running; Rick, W6ESS did some synthesizer work; John, N6AX went to DM06 for some experiments but only 6 mtr worked, is working on 24 GHz filters; John KJ6HZ moved the test bench and worked on a Texas Synthesizer; Kurt, K6RRA went to Long Beach Club and provided a microwave demo; chip, N6CA cleaned up the shop and has new test gear; Ken, WA6DTA went to a WSWSS meeting with microwave demo; Chuck , W7VX got his 2304 rig working and has started 3.4 GHz rig; Pete, W6DXJ did some 5.7 GHz work; Kerry , N6IZW went to graduations, did some synthesizer work, has a 5 inch lens for the optical communicator, and has a mod to increase the frequency for his power meter up to 40 GHz; Ed, W6OYJ has been adding information to the web site; George, K6MBL indicated that he has one of the first rockloc rigs available for someone; Dick, K6HIJ has the new CNC mill running and has program to make WR-42 flanges; Larry, K6HLH rebuilt the 3.4 rig for tower top operation and has a 3'x 3'x 8' hole ready to fill for new tower; Mike, W6YLZ has hole full of concrete for tower, weighing 10 GHz modules and antenna at 50 pounds so is looking for a old TV tripod to mount the stuff on; Paul, KH6HME was visiting the mainland and is ready for ducting season; Dave, WA6CGR has been helping other tweak up gear; Doug, K6JEY has been working on his Celeron 24 GHz rig.

Hello Microwavers, Recently we have added some new articles and drawings to the SBMS web pages, in the San Diego Technical Papers section.

They include:

Modifying a Qualcomm/Globalstar 1.6 GHz 5-8 watt PA to 1.3 Ghz.

Modifying TVRO 12 GHz LNBs for 10 GHz LNA use.

Excel spreadsheets for NF/NT measurement by comparison of Earth vs. cold sky rcvr noise output. Updated Slot Antenna design program in BASIC (with warnings!)

And items related to P-Com 23 GHz conversion to 24 GHz, such as K6VLM's 3072-432 U/D Converter schematic, parts list, and pcb layout of the newly produced boards. K6VLM's i.f. filter design for 3072 and 2208 MHz

WB6IGP modification of the Qualcomm DRO Synthesizer to 2640 MHz.

These can be found at: <http://www.ham-radio.com/sbsm/sd> . 73s from Ed Munn, W6OYJ (858) 453-4563

The Western States VHF/UHF and Microwave Conference A CALL FOR PAPERS

The conference date for this year is October 11, 12, 13, 2002. The location is Southern California. At the Cerritos Sheraton Hotel, Towne Center, 12725 Center Court Drive, Cerritos, CA 90703. Hosted by the Western States Weak Signal Society an association of VHF/UHF amateur radio operators who use narrow band modes in the 50

MHz and up amateur radio frequencies. We hold an annual conference and meeting each fall. The conferences are generally aimed at the weak signal aspect of the hobby i.e.: Contesting; awards; DXing through EME (earth-moon-earth) contacts, meteor scatter, and looking for tropospheric ducting and e-layer enhanced contacts. This year our conference will be an invitation to all VHF/UHF and microwave amateur radio operators and will include technical sessions of interest to FM operators as well as weak signal enthusiasts.

Our conference theme is: To provide VHF/UHF enthusiasts the knowledge and tools to work DX and contests on 6 meters and up. We are soliciting papers and technical sessions with this theme in mind. Possible topics are:

- v Weak signal operating on 6 meters and up,
- v Contesting for the VHF/UHF and Microwave operators
- v EME, meteor scatter, weak signal tropo using new computer assisted programs, hardware, and modes (PSK31, FSK441, JT44, etc.)
- v DXpeditions, Mountain Topping
- v Building equipment for Microwave
- v Antennas, design, building, testing, putting up big arrays, phasing, etc.
- v FM contesting
- v FM linked repeater systems
- v Remote bases
- v Using internet to amateur radio portals
- v Satellites
- v APRS

Please submit an abstract for consideration. You need not present the paper for it to be included in the proceedings. In addition the conference will include a Saturday evening banquet with guest speaker as well as table top exhibits from all the major manufacturers and VUCC checking and many more items of interest to the VHF/UHF enthusiast.

Contact Malcolm KO6SY ko6sy@soara.org 949 951 1882 (Cell & Office)

Fellow microwavers, anyone using a magnetic compass for finding beam headings must deal with declination offset, the difference between true north and the compass' needle, which aligns with the horizontal trace of the earth's magnetic field. Magnetic declination is least through the US Midwest, greater at the SE and SW coasts, and still greater at the NE and NW coasts. The current magnetic poles are found at 78.5 N and 103.4 W degrees, near Ellef Ringnes Island, Canada, and 65 S and 139 E degrees, in Commonwealth Bay, Antarctica.

My ten-year-old compass came with a map of North America showing declination in 10-degree increments. This map is also available online at many sites. I found one at

http://www.spacecom.com/customer_tools/html/body_mag_dec_map.htm.

Also, the same site has a calculator that computes the estimated values of Earth's magnetic field, including magnetic declination (D), from a US zip code or global coordinates. It's at

<http://www.ngdc.noaa.gov/cgi-bin/seg/gmag/fldsntl.pl>

Finally, our friends at NOAA/NESDIS/National Geophysical Data Center have a nice website that explains many things geomagnetic in ham friendly terms. Find this at <http://www.ngdc.noaa.gov/seg/potfld/faqgeom.html>., here you'll learn how the magnetic poles wander around, and even when the earth's magnetic field could swap polarity so you can be prepared.

See you on the air, Frank WB6CWN

Hello the Net, Standings for 222 MHz are due the ARRL by 1 June 2002 for inclusion in the August 2002 issue. Standings for 432 MHz are due 1 July for the October QST. Microwave standings are due 1 November for publishing in January QST. Both members and NON-members can submit their band standings for QST publication. Reporting is for WORKED performance not just the valid QSL cards you have in hand.

e-mail your data to: standings@arrl.org. include:

whether EME or non-EME (terrestrial), band, # states worked, # DXCC entities worked, # grids worked and the best terrestrial DX worked in kilometers

Stan, WA1ECF

73's Bill

Hi Bill,

On Saturday, 8 June, I made the tour of the Dx9Xxx grids. All the contacts were with Bill, K0RZ. I traveled out I80 to Nebraska. I exited on exit 117 near Ogalalla. I saw a microwave tower north of the community of Brule, NE. I found a nice site on road 100 W. It was at a bend in the road overlooking a small canyon. A good site!! The grid was DN91AD. (The distance to K0RZ is 228 miles) I contacted Bill on 443.1 with good signals. (This time I took my big 432 beam) We started on 902.1 and at first the xmtr would not work. I did the traditional. I pounded on it. I came to life and I sent CW to Bill. He heard me with good signal strength. When he sent to me, I heard NOTHING. Just Rx noise. I tried changing cables, more pounding but nothing at all. Finally, in desperation, I bypassed the preamp all together and ran the signal directly into the Granger down converter. At last!! I was able to copy Bill. No S meter reading, but good copy on CW. We had the contact. I had to move the cables manually for T/R so the contact was slow. I'm glad we had good liaison on 433.1



Then we went to 2304.1 Signals were fair. I had no S meter reading, but was able to copy Bill's CW easily. The weather was good. Scattered alto cumulus and 10 mph wind from the SE.

I headed for DN90. I traveled south on NE rt61. When I was nearly down to US34, I saw a microwave tower. I found a dirt road, which was a little higher than the surrounding area. That part of NE is very flat. A few little hills, but no really good sites. I pulled off the highway onto the dirt road and set up. It was hot!! The temp was near 100 degrees and the wind was now 23-30 mph. The 4' dish was a handful. I had to tie it to the truck to keep

it pointed. The grid was DN90FD. (The distance is 211 miles) Signals were good on 902 but very weak on 2304. My 902 preamp was still not working; so I had to move the cables and by-pass it for T/R.

next stop Kansas!! I drove to RT 34 and then west to Haigler NE. I took a side road and was soon in Kansas. My GPS was invaluable in finding the boundary of the grids. A map is good, but the GPS is better. It will let you go to 'the next hill' and still be sure you are still in the grid.

I found a side road with a rise?? (Kansas is really flat) that was still in DM99AW. (The distance is 185 miles) I set up. The wind was now about 40 mph and I really had trouble with the dish. At one point, a gust grabbed it and it got away from me and pinned me against the rack. I tied it down and set up the rig. Signals were better here. 902 was good (actually had a small S meter reading even without the preamp) 2304 was a little better, but lots of QSB.

After I finished the contacts and was taking down the rig, I had a visit from 2 farmers. One of them had been interested in ham radio in his younger days. They were very interested in the rig and I gave them the tour.

It was a long day, but we did 3 grids in the 90's on 902 and 2304. We did not try any higher bands. In that much wind, I could not have kept the dish pointed at anything!! I am enclosing pix from the DN91 site. It is 4 hours drive (including setup time) from home QTH. (There is a very nice overlook on I80 just before you cross the Platt River. It would be in DN81 but it should be a good site.

73 Phil, W6HCC

The San Bernardino Microwave Society is a technical amateur radio club affiliated with the ARRL having a membership of over 90 amateurs from Hawaii and Alaska to the east coast. Dues are \$15 per year which includes a badge and monthly newsletter. Your mail label indicates your call followed by when your dues are due. Dues can be sent to the treasurer as listed under the banner on the front page. If you have material you would like in the newsletter please send it to Bill WA6QYR at 247 Rebel Road Ridgecrest, CA 93555, bburns@ridgecrest.ca.us, or phone 760-375-8566. The newsletter is generated about the 15th of the month and put into the mail at least the week prior to the meeting. This is your newsletter. SBMS Newsletter material can be copied as long as SBMS is identified as source.



San Bernardino Microwave Society newsletter

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